

Amendments to the Claims

Claims 1-68 (Canceled).

69. (Currently Amended) A method of forming an isolation trench in a semiconductor substrate comprising:

forming a masking layer over a semiconductor substrate, the masking layer comprising silicon nitride received over an oxide layer;

~~etching through the masking layer and exposing an upper surface of the semiconductor substrate, the etching comprising over-etching through the upper surface of the semiconductor substrate while some of the masking layer masks some of the substrate to form~~ within a microwave powered plasma etcher effective to expose semiconductive material of the semiconductor substrate using a first gas chemistry comprising CF₄ and CHF₃, a first magnetron power, and a first RF power; etching into semiconductive material of the semiconductor substrate within the microwave powered plasma etcher using a second gas chemistry comprising CF₄ and CHF₃, a second magnetron power, and a second RF power; quantity of CF₄ being greater than quantity of CHF₃ in the first gas chemistry, quantity of CHF₃ being greater than quantity of CF₄ in the second gas chemistry, the second RF power being greater than the first RF power, the etching of the masking layer and into semiconductive material forming a first isolation trench portion within semiconductive material of the

semiconductor substrate, the first isolation trench portion having a first depth within the semiconductor substrate and having a first sidewall intersecting ~~the upper surface~~ an upper surface of semiconductive material of the semiconductor substrate at a first angle;

forming a second isolation trench portion within semiconductive material of the semiconductor substrate, the second isolation trench portion being formed within and extending below the first isolation trench portion, the second isolation trench portion having a second depth within semiconductive material of the semiconductor substrate and including a second sidewall intersecting the first sidewall at an angle with respect to the upper surface that is greater than the first angle; and

filling the first and second isolation trench portions with dielectric material.

Claims 70-73 (Canceled).

74. (Previously Presented) The method of claim 69 further comprising:

terminating the forming of the second isolation trench portion; and
then de-chucking the semiconductor substrate in an environment of argon.

Claims 75-80 (Canceled).

81. (New) The method of claim 69 wherein the forming of the second isolation trench portion occurs by etching in the microwave powered etcher using a gas chemistry which is void of CF_4 and CHF_3 .

82. (New) The method of claim 69 wherein the first and second magnetron powers are the same.

83. (New) The method of claim 69 wherein the forming of the second isolation trench portion occurs by etching in the microwave powered etcher using a magnetron power which is greater than the first magnetron power.

84. (New) The method of claim 69 wherein the forming of the second isolation trench portion occurs by etching in the microwave powered etcher using a magnetron power which is greater than the second magnetron power.

85. (New) The method of claim 69 wherein the forming of the second isolation trench portion occurs by etching in the microwave powered etcher using a magnetron power which is greater than both the first and second magnetron powers.

86. (New) The method of claim 85 wherein the first and second magnetron powers are the same.

87. (New) The method of claim 69 wherein the forming of the second isolation trench portion occurs by etching in the microwave powered etcher, and further comprising dechucking the substrate in an inert atmosphere using a magnetron power which is greater than both the first and second magnetron powers.

88. (New) The method of claim 87 wherein the dechucking the substrate is void of using RF power.

89. (New) The method of claim 69 wherein the forming of the second isolation trench portion occurs by etching in the microwave powered etcher, pressure within the etcher during etching the second isolation trench portion being less than pressure within the etcher during etching of the masking layer and into semiconductive material to form the first isolation trench portion.

90. (New) The method of claim 69 wherein the forming of the second isolation trench portion occurs by etching in the microwave powered etcher using a gas chemistry which is void of any inert gas.

91. (New) The method of claim 69 wherein the semiconductive material comprises silicon.

92. (New) The method of claim 69 wherein the forming of the second isolation trench portion includes forming the second angle to be between eighty and ninety degrees.

93. (New) The method of claim 69 wherein the forming of the first isolation trench portion includes forming the first angle to be in a range of from about thirty degrees to about seventy degrees and forming a second isolation trench portion includes forming the second angle to be more than eighty degrees.

94. (New) The method of claim 69 further comprising planarizing the dielectric material filling the first and second isolation trench portions.

95. (New) The method of claim 69 wherein the forming of said first isolation trench portion comprises forming a first isolation trench portion sidewall at least some of which forms a substantially straight linear segment.